Title of Instructional Materials: Holt McDougal Larson Alg I

Grade Level: <u>Algebra I</u>

Summary of Holt McDougal Larson Alg I

Overall Rating:	Weak (1-2)☐ Moderate (2-3)☐ Strong (3-4)	Important Mathematical Ideas:	Weak (1-2)Moderate (2-3)Strong (3-4)
Summary / Justification / Eviden This book marches through a series and procedures are introduced and connection to bigger ideas.	s of lessons where an isolated skill	Summary / Justification / Evider Topics tend to be disconnected and is little taught as multiple approace and factoring lessons, excluding op-	nd taught as isolated topics. There thes (ie solving equations 3.1 - 3.4
Skills and Procedures:		Mathematical Relationships:	Weak (1-2)Moderate (2-3)Strong (3-4)
Summary / Justification / Eviden These were not developed concept were taught in isolation, and the preach new lesson begins with the "hexamples.	ually (ie exponents 8-3). The skills ocedure is the primary focus as	Summary / Justification / Evide Problems are practiced as "naked" problem set when they are taught	' problems until the end of the

Ly overall, covers standards

- weaker on expron.
- not as strong of explanations

Instructional Materials Analysis and Selection

Phase 3: Assessing Content Alignment to the Common Core State Standards for Mathematics

Traditional Pathway for High School: Algebra I





Phase 3:

Assessing Content Alignment to the Common Core State Standards for Mathematics

A project of

The Indiana Education Roundtable, The Indiana Department of Education, and

The Charles A. Dana Center at The University of Texas at Austin

2010-2011



Title of Instructional Materials: Holt McDougal Larson Alg I

ALGEBRA I — NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

Extend the properties of exponents to rational exponents.	Summary and documentat met. Cite examples from the	ion of how	the domain, clu	ster, and stan	dard are
N-RN.1	met. One examples from th	ie materials	5.		
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(51/3)3 = 5(^{1/3})^3$ to hold, so $(5^{1/3})^3$ must equal 5.	Important Mathematical Ideas	1	2	(3)	4
	Skills and Procedures	1	2	3	4
Indicate the chapter(s), section(s), and/or page(s) reviewed. \$\phi 509 - 510\$	Mathematical Relationships	1	2	3	 4
	Summary / Justification / English as extension		good examp	clas + proce	dree
	Portions of the domain, cludeveloped in the instruction	ster, and st	andard that are Is (if any):	missing or no	ot well
	Overall Rating				•

Reviewed By:	

Title of Instructional Materials:

ALGEBRA I - NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

Extend the properties of exponents to rational exponents.	Summary and documentation of how the domain, cluster, and standard a met. Cite examples from the materials.
N-RN.2	
Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Important Mathematical Ideas 1 3
A 501-20	Skills and Procedures
	1 2 3
	The state of the s
	Mathematical Relationships 1 2 3
	Summary / Justification / Evidence
Indicate the chapter(s), section(s), and/or page(s) reviewed.	
· p 509 + 510	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
A further materials coming in Jan. 2011	
	Overall Rating
	1 2 3 4

Reviewed By:	
•	•

Title of Instructional Materials:	
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ALGEBRA I — NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

Use properties of rational and irrational numbers.	Summary and documentation of how the domain, cluster, and standard a			
N-RN.3	met. Cite examples from the materials.			
Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	Important Mathematical Ideas 1 2 3			
A PROBE TO LINE OF THE STATE OF	Skills and Procedures 1 2 3			
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Mathematical Relationships 1 2 3			
	Summary / Justification / Evidence Taught as extension - good example + explanation of closure but leaves it up to student to prove lead two Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):			
	Overall Rating			

Reviewed By:	
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Title of Instructional Materials:	

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

Reason quantitatively and use units to solve problems.

N-Q.1

Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.*

Note: Foundation for work with expressions, equations and functions.

Indicate the chapter(s), section(s), and/or page(s) reviewed.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas



Skills and Procedures



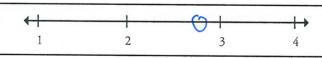
Mathematical Relationships



Summary / Justification / Evidence

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Overall Rating



Title of Instructional Materials:

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard a met. Cite examples from the materials.				
N-Q.2		ic materials.			
Define appropriate quantities for the purpose of descriptive modeling.*	Important Mathematical Ideas	+			
Note: Foundation for work with expressions, equations and functions.			2	3	4
	* * * * * * * * * * * * * * * * * * * *				
	Skills and Procedures	+			
	Marine and U		2	3	4
	Mathematical Relationships	4			
			2	3	4
	Summary / Justification / E	vidence	questions	+ mo	
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Not impressed explanati	on or qui	dance		
ρ 230, 337, 342, 888, 891, 893 CC: 1-6, 8-9	Portions of the domain, cludeveloped in the instruction	ster, and sta	ndard that are s (if any):	missing or no	t well
	700				
	Overall Rating	<u>+</u>			→
		(1)	2	3	4

Title of Instructional Materials:

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-Q.3	
Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*	Important Mathematical Ideas 1 2 3 4*
Note: Foundation for work with expressions, equations and functions.	
	Skills and Procedures
	4
	Mathematical Relationships 1 2 3 4
	Summary / Justification / Evidence Significant figures well explained in CC
Indicate the chapter(s), section(s), and/or page(s) reviewed.	
p170 + 172 CC1-6	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard a met. Cite examples from the materials.				dard are
A-SSE.1a	metrica di	ie materiais.			
1. Interpret expressions that represent a quantity in terms of its context.*	Important Mathematical Ideas	+		-	
 Interpret parts of an expression, such as terms, factors, and coefficients. 	TO APUS NO. (HEROE IN CAMPAGE	I Nai airea es a	2	3	4
Note: Linear, exponential, quadratic.	Committee of the constant characters.				top +
	Skills and Procedures	+			
	the grant of	I or just 4	2	3	4
	Mathematical Relationships	+			
		1	(2)	3	4
	Summary / Justification / E	vidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed.				X	
996 97-98 99 255 115 256	Portions of the domain, clu developed in the instruction	ster, and star	ndard that are (if any):	missing or no	ot well
126-127	men characterine and	a usupan siar	-		
244-245	Overall Rating	+		0	→
011		1	2	3	4

Reviewed By:	
Title of Instructional Materials:	

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Interpret the structure of expressions.	Summary and documentation met. Cite examples from the			ster, and stand	ard are
A-SSE.1b	Important Mathematical Ideas	4.1	ı		
1. Interpret expressions that represent a quantity in terms of its context.*	Important Mathematical races	1		N3X	1
b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret P(1+r) ⁿ as the product of P and a factor not depending on P.	t many species and second			X	4
Note: Linear, exponential, quadratic.	Skills and Procedures	1	2	Ø	4
	Mathematical Relationships	1	2	3	4
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Summary / Justification / Ex	vidence	presation	٥	
maicate the chapter(s), section(s), and/or page(s) reviewed.					
Same as (a) previous (a)	Portions of the domain, clu developed in the instruction			e missing or no	t well
Pa	THE RESERVE THE PARTY OF THE PA				
	Overall Rating	+	0		→
		1	2	3	4

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.			dard are	
A-SSE.2	The state oxamples from the	e materials.	•		
Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.	Important Mathematical Ideas	1	2	3	4
Note: Linear, exponential, quadratic.					
	Skills and Procedures	1	2	3	4
	Mathematical Relationships	← I	2	3	4
	Summary / Justification / Ev	vidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Service and an experience of				
99-10 ½ 105 106 120 582-584 610 586-588	Portions of the domain, clus developed in the instruction No exponential No exponential	ster, and sta al materials	andard that are s (if any):	missing or no	t well
123-124 592-594 125 596-597 555-556 600-601	Overall Rating	1	1 2	(3)	4

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Summary and documentation of how the domain, cluster, and standard are Write expressions in equivalent forms to solve problems. met. Cite examples from the materials. A-SSE.3a Important Mathematical Ideas 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* a. Factor a quadratic expression to reveal the zeros of the function it defines. Skills and Procedures Note: Quadratic and exponential. Mathematical Relationships Summary / Justification / Evidence Indicate the chapter(s), section(s), and/or page(s) reviewed. 604 Portions of the domain, cluster, and standard that are missing or not well 607 developed in the instructional materials (if any): 609 612 641-642 598 647 669-670 601 602 Overall Rating 603

Reviewed By:	
Title of Instructional Materials:	

ALGEBRA I - ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Summary and documentation of how the domain, cluster, and standard are Write expressions in equivalent forms to solve problems. met. Cite examples from the materials. A-SSE.3h 3. Choose and produce an equivalent form of an expression to reveal and Important Mathematical Ideas explain properties of the quantity represented by the expression.* b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. Skills and Procedures Note: Quadratic and exponential. Mathematical Relationships 0 Summary / Justification / Evidence Indicate the chapter(s), section(s), and/or page(s) reviewed. Portions of the domain, cluster, and standard that are missing or not well None of completing square... developed in the instructional materials (if any): No completing the square; however, max + min Shown of graph Overall Rating

Reviewed By:	<u> </u>
Title of Instructional Materials:	

ALGEBRA I — ALGEBRA (A)

Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard armet. Cite examples from the materials.
A-SSE.3c	Comment of the stage of
 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* 	Important Mathematical Ideas 1 2 3 4
 c. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15' can be rewritten as (1.15¹/¹²)¹²² ≈ 1.012¹²¹ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%. Note: Quadratic and exponential. 	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary / Justification / Evidence
Indicate the chapter(s), section(s), and/or page(s) reviewed.	
p 524 yexe. 536 Grand. Caroled of Parts 536 Grand. Caroled of Parts 558.392	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating
	1 2 3 4

Reviewed By:	

Title of Instructional	Materials:
The of mshuchonal	Materials:

ALGEBRA I — ALGEBRA (A)

Arithmetic with Polynomials and Rational Expressions (A-APR)

Perform arithmetic operations on polynomials.	Summary and documentation of how the domain, cluster, and standard are
A-APR.1	met. Cite examples from the materials.
Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Important Mathematical Ideas 1 2 3 4
Note: Linear and quadratic.	
	Skills and Procedures 1 2 3 4.
	Mathematical Relationships 1 2 3 4
	Summary / Justification / Evidence
Indicate the chapter(s), section(s), and/or page(s) reviewed.	
557-559 624 561-574	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
580-581 589	
615-617	Overall Rating 1 2 3 4

Reviewed By:	
Reviewed By.	

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Create equations that describe numbers or relationships.		Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				lard are	
A-CED.1							
Create equations and inequalities in one variable and use them to solve problems. <i>Include equations arising from linear and quadratic functions, and simple rational and exponential functions.</i> *		Important Mathematical Ideas	1	2	3	4	
Note: Linear, quadratic, and exp	oonential (integer inputs	only).	Skills and Procedures	1	2	3	4
			Mathematical Relationships	1	2	3	4
			Summary / Justification / E	vidence			
Indicate the chapter(s),							
143 145-146 150 152-153 155 155 383 385-386 588 599 67-368 599 822 825	Portions of the domain, clu developed in the instruction	ster, and st nal materia	andard that are	missing or no	ot well		
358 5	79-580 65° 85 66	+	Overall Rating	1	1 2	3	

Reviewed By:	

Title of Instructional N	laterials.
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ALGEBRA I — ALGEBRA (A)

Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard armet. Cite examples from the materials.			
A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.*	Important Mathematical Ideas			
Note: Linear, quadratic, and exponential (integer inputs only).				
	Skills and Procedures 1 2 3			
	Mathematical Relationships 1 2 3)			
	Summary / Justification / Evidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed.				
263 218-221 226-232 245 247-249 265 265 267-268 267-268 283-289 283-289 292-299 292-299 292-299 292-634 303-308 636-636 636-636	Portions of the domain, cluster, and standard that are missing or not wel developed in the instructional materials (if any):			
254-255 313 357-259 315-316 638 646 648-649	Overall Rating 1 2 3 4			

Reviewed By:	

Title of	Instructional	Materials.	
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ALGEBRA I — ALGEBRA (A)

Create equations that describe numbers or relationships.			Summary and documentation met. Cite examples from the			ster, and stand	ard are
A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing		Important Mathematical Ideas	1	2	3	4	
nutritional and cost constraints on combinations of different foods.* Note: Linear (integer inputs only).	Skills and Procedures	 	2	3	4		
			Mathematical Relationships	1	2	3	4.
			Summary / Justification / E	vidence			
	er(s), section(s)	, and/or page(s) reviewed.					
49 29 32-33 37 39-40 81 83-84	100 - 101 150 152 - 153 285 288 - 289 408	453 456-457 468 471-472	Portions of the domain, clu developed in the instruction			missing or no	ot well
90 92-93 98	410-411		Overall Rating	1	2	3	4

Reviewed By:	

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Create equations that describe numbers or relationships.	Summary and documentar met. Cite examples from ti	tion of how t	he domain, clu	ster, and stan	dard are
A-CED.4	The transfer of the transfer o	ile materiais.	•		
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance $R.*$	Important Mathematical Ideas	1	2	3	4
Note: Linear, quadratic, and exponential (integer inputs only).	Skills and Procedures	(2	3	4
	Mathematical Relationships	1	2	3	- 4
	Summary / Justification / E	Evidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed. ্ব ।৪৭ - ।৪৭	Portions of the demain				
190-191 194-197 199 212 940	Portions of the domain, cludeveloped in the instruction	uster, and sta	andard that are s (if any):	missing or no	ot well
	Overall Rating	4	2	3	

Title of Instructional Materials:

ALGEBRA I - ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Understand solving equations as a process of reasoning and explain the reasoning.

A-REI.1

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

Note: Master linear; learn as general principle.

Indicate the chapter(s), section(s), and/or page(s) reviewed.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas

Skills and Procedures

Mathematical Relationships 3

Summary / Justification / Evidence

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Overall Rating

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Solve equations and inequalities in one variable.	Summary and documentati	ion of how t	he domain, clu	ster, and star	ndard are
A-REI.3	met. Cite examples from th	e materials.			
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Important Mathematical Ideas	 	2	-	
Note: Linear inequalities; literal that are linear in the variables being solved for; quadratics with real solutions.	a transition of see the teather	ra, mari	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3	4
	Skills and Procedures	1	2	3	4
	Mathematical Relationships	1	2	3	4
	Summary / Justification / E	vidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed. $9.132-133$ 354	Ş				
134-146 148-161 163-167 173 356-374 377-378 380-395	Portions of the domain, cluded developed in the instruction	ster, and stand materials	andard that are s (if any):	missing or n	ot well
177-181		. 1.5-17-2			
184-194	Overall Rating	1	2	3	

Reviewed By:	

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litle	of Instru	tional	Materials:
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Important Mathematical Ideas

ALGEBRA I - ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Summary and documentation of how the domain, cluster, and standard are Solve equations and inequalities in one variable. met. Cite examples from the materials.

A-REI.4a

- 4. Solve quadratic equations in one variable.
 - a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.

Note: Linear inequalities; literal that are linear in the variables being solved for; guadratics with real solutions.

Skills and Procedures

Mathematical Relationships

Summary / Justification / Evidence

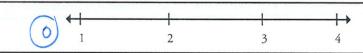
Indicate the chapter(s), section(s), and/or page(s) reviewed.

No completing the square

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

to completing the square

Overall Rating



Title of Instructional Materials:

ALGEBRA I - ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Solve equations and inequalities in one variable.

A-REI.4b

- 4. Solve quadratic equations in one variable.
 - b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.

Note: Linear inequalities; literal that are linear in the variables being solved for; quadratics with real solutions.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.



Skills and Procedures



Summary / Justification / Evidence

Indicate the chapter(s), section(s), and/or page(s) reviewed.

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Overall Rating

1 2 3 4

Reviewed By:	
9	

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Solve systems of equations. Summary and documentation of how the domain, clust met. Cite examples from the materials.					ard are
A-REI.5					
Prove that, given a system of two equations in two variables, replacing one	Important Mathematical Ideas	+			\longrightarrow
equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	germobagai cakayanoozii	1	2	3	4
Note: Linear-linear and linear-quadratic.	1270 x 9491 x 1110 8 700 x 111 3 70				
	Skills and Procedures	+			→
		1	2	3	4
	parameter of part of				
	Mathematical Relationships	+			
		1	(2)	3	4
	Summary / Justification / E	vidence			
Indicate the chapter(s), section(s), and/or page(s) reviewed.	1000 v v v v v v				
CC 10 19	Portions of the domain, clu	ster, and s	tandard that are	missing or no	t well
CC 18-19	developed in the instruction	nal materia	ils (if any):		
	No quado				
	Te; Cuntrant 65 associa	3 (11222-11)			
	Overall Rating	+		-	
		1	2	3	4

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Solve systems of equations.	Summary and documenta	tion of how t	the domain, clu	ster, and stand	dard ar
A-REI.6	met. Cite examples from the	he materials	•		
Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Important Mathematical Ideas	1	2		
Note: Linear-linear and linear-quadratic.	A A A A A A A A A A A A A A A A A A A		2	3	4
	Skills and Procedures	1	2	3	4
	Mathematical Relationships	1	2	3	4
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Summary / Justification / E	Evidence			
P 426 - 465 472 - 483 485 508	Portions of the domain, cludeveloped in the instruction	uster, and sta nal materials	andard that are s (if any):	missing or not	t well
	Overall Rating	+			

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litle	Ot	Instructional	Materials.

ALGEBRA I — ALGEBRA (A)

Solve systems of equations.	Summary and documentation met. Cite examples from the	on of how the	e domain, clu	ster, and stand	dard are
A-REI.7					
Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.	Important Mathematical Ideas	1	2	3	4
Note: Linear-linear and linear-quadratic.	ji e				
	Skills and Procedures	+		-	→
		1	2	3	4
	Mathematical Relationships				<u></u>
	Summary / Justification / Ev	1	2	3	4
Indicate the chapter(s), section(s), and/or page(s) reviewed.	good good	vidence			
CC21-27	Portions of the domain, clus developed in the instruction	ster, and star	ndard that are (if any):	e missing or no	ot well
	Overall Rating	+			\

Title of Instructional Materials:

ALGEBRA I — ALGEBRA (A)

Represent and solve equations and inequalities graphically.	Summary and documentat met. Cite examples from the	ion of how	the domain, clu	ster, and stand	ard are
A-REI.10		ic materials	•		•
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	Important Mathematical Ideas	1	(2)	3	4
Note: Linear and exponential; learn as general principle.	present the second seco				
	Skills and Procedures				
	rymbymilen gwi		2	3	4
	and the same of th				
Indicate the chapter(s), section(s), and/or page(s) reviewed.	Mathematical Relationships				
	Summary / Justification / E	vidence		(3)	4
	just a P@ H	e bottom	of the pag	- on 215	
φ 215	Portions of the domain, clu developed in the instruction	ster, and st	andard that are	missing or not	well
	no exp.;				
	100 to 10	LOGIAL ST			
	Overall Rating	4			1.

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ALGEBRA I - ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Penresent and	ealyo aquatione	and inequalities	graphically
represent and	soive equations	and inequalities	grapilically.

represent and solve equations and mequanties grapmeany

A-REI.11

Explain why the *x*-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*

Note: Linear and exponential; learn as general principle.

Indicate the chapter(s), section(s), and/or page(s) reviewed.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas

1 2 3 4

Skills and Procedures

Mathematical Relationships

1 2 3 4

Summary / Justification / Evidence
Graphing ... expl. not there as now

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

poly, ab. value, exp., log

Overall Rating

1 2 3 4

Title of Instructional Materials:

ALGEBRA I - ALGEBRA (A)

Represent and solve equations and inequalities graphically.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.		
A-REI.12	and the oxamples from the materials.		
Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	Important Mathematical Ideas 1 2 3	4	
Note: Linear and exponential; learn as general principle.	Skills and Procedures 1 2 3	4	
	Mathematical Relationships 1 2 3		
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P 404-413 418-419 422-423 465-474	Portions of the domain, cluster, and standard that are missing or not we developed in the instructional materials (if any):	/ell	
478 - 479	Overall Rating 1 2 3	<u>·</u>	

Title of Instructional Materials:

ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

Understand the concept of a function and use function notation.

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F-IF.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).

Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas

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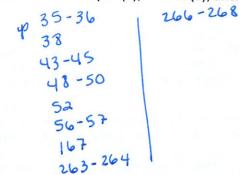
Skills and Procedures

Mathematical Relationships

1 2 3 4

Summary / Justification / Evidence

Indicate the chapter(s), section(s), and/or page(s) reviewed.



Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

No exp.

Overall Rating

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Title of Instructional Materials:

Important Mathematical Ideas

met. Cite examples from the materials.

ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

Understand the concept of a function and use function notation.

F-IF.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences.

Skills and Procedures

Overall Rating

Mathematical Relationships

Summary / Justification / Evidence

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Indicate the chapter(s), section(s), and/or page(s) reviewed.

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Summary and documentation of how the domain, cluster, and standard are

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Title of Instructional Materials:

ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

Understand the concept of a function and use function notation.

F-IF.3

Recognize that sequences are functions, sometimes defined recursively. whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for $n \ge 1$.

Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences.

Important Mathematical Ideas

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Skills and Procedures

Mathematical Relationships

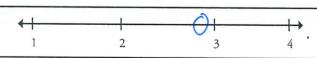
Summary / Justification / Evidence

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Summary and documentation of how the domain, cluster, and standard are

Overall Rating



Title of Instructional Materials:

ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

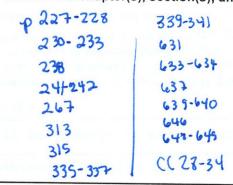
Interpret functions that arise in applications	in terms of the context.
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F-IF.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*

Note: Linear, exponential, and quadratic.

Indicate the chapter(s), section(s), and/or page(s) reviewed.



Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas



Skills and Procedures

Overall Rating



Mathematical Relationships



Summary / Justification / Evidence

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

expon, symm, end beh, periodicy

Title of Instructional Materials:

ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

Interpret functions that arise in applications in terms of the context.

F-IF.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*

Note: Linear, exponential, and quadratic.

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

Important Mathematical Ideas

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Skills and Procedures

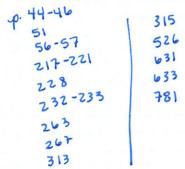
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Mathematical Relationships

1 2 3 4

Summary / Justification / Evidence

Indicate the chapter(s), section(s), and/or page(s) reviewed.



Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

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Overall Rating

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ALGEBRA I - FUNCTIONS (F)

Interpreting Functions (F-IF)

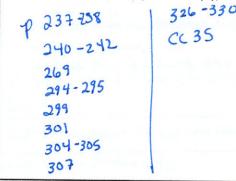
Interpret functions that arise in applications in terms of the context.

F-IF.6

Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.*

Note: Linear, exponential, and quadratic.

Indicate the chapter(s), section(s), and/or page(s) reviewed.



Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

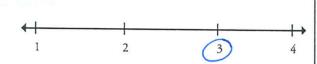
Important Mathematical Ideas

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Mathematical Relationships



Summary / Justification / Evidence

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Drug (2)

Documenting Alignment to the Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and relationships. Braph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and relationships. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence





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Title of Instructional Materials:

Documenting Alignment to the Standards for Mathematical Practice

2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

Overall Rating

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence



Algebra 1

The Real Number System N -RN

Extend the properties of exponents to rational exponents.

1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define 51/3 to be the cube root of 5 because we want (51/3)3 = 5(1/3)3 to hold, so (51/3)3 must equal 5.

2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Use properties of rational and irrational numbers.

3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational

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Missing or weak content from this standard

Overall for this Standard: _______

Algebra 1

Quantities N -Q

Reason quantitatively and use units to solve problems. (Foundation work with expressions, equations, and functions)

- 1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- 2. Define appropriate quantities for the purpose of descriptive modeling.
- 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

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Overall for this Standard:

Algebra 1

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Create equations that describe numbers or relationships

- 1. Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*
- 2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
- 3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.

4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR

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Overall for this Standard: __/__

Algebra 1

Reasoning with Equations and Inequalities A -RE I

Understand solving equations as a process of reasoning and explain the reasoning

1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

Solve equations and inequalities in one variable

- 3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- 4. Solve quadratic equations in one variable.

a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x-p)2 = q that has the same solutions. Derive the quadratic formula from this form.

b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the

initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \parallel b$ if for real numbers a and b.

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CONTENT STANDARDS RUBRIC Algebra 1

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Analyze functions using different representations

- 7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
- a. Graph linear and quadratic functions and show intercepts, maxima, and minima.
- b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
- e. Graph exponential functions, showing intercepts and end behavior.
- 8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
- a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
- b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as y = (1.02)t, y = (0.97)t, y = (1.01)12t, y = (1.2)t/10, and

classify them as representing exponential growth or decay.

9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example.

given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

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Overall for this Standard:

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CONTENT STANDARDS RUBRIC Algebra 1

Building Functions F-BF

Build a function that models a relationship between two quantities

- 1. Write a function that describes a relationship between two quantities.
- a. Determine an explicit expression, a recursive process, or steps for calculation from a context.
- b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.
- c. (+) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.
- 2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.

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Overall for this Standard:

Algebra 1

Building Functions F-BF

Build new functions from existing functions

- 3. Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x) f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing* even and odd functions from their graphs and algebraic expressions for them.
- 4. Find inverse functions. ?

a. Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. For example, f(x) = 2x3 or

 $f(x) = (x+1)/(x-1) \text{ for } x \neq 1.$

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Overall for this Standard: _____

Algebra 1

Linear, Quadratic, and Exponential Models F-LE

Construct and compare linear, quadratic, and exponential models and solve problems

- 1. Distinguish between situations that can be modeled with linear functions and with exponential functions.
- a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
- b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
- c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
- 2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two inputoutput pairs (include reading these from a table). \$\int_{\infty} \forall 9

 3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more
- generally) as a polynomial function.

Interpret expressions for functions in terms of the situation they model

5. Interpret the parameters in a linear or exponential function in terms of a context.

J. Interpret the pare	· · · · · · · · · · · · · · · · · · ·		opmei		Connections				Rigor and Depth				Overall/Evidence
Mathematical Ideas	Are id	leas condoped (4)	ceptually or appro skill leve	ached	Are ideas expanded to other math ideas (4) or developed independently of each other (1)?				Do idea import of mult only us	as requi ant idea tiple app	re extensis and the proaches cedures	sion of e use (4) or	PP. 529-527 Connetion & contemp begin in floration 29.
	4	3	2	1	4	3	2	1	4	3	2	1	begin infludulen 39.
Skills and Procedures	integ or are	rated wit	procedur h math ic e primary (1)?	leas (4)	Are skills and procedures connected to other ideas (4) or treated as isolated skills with no connection (1)?				Are skills and procedures critical to the application of other math ideas (4) or are they practiced without conceptual development (1)?				p. 53 9
	4	3	2	1 >>>	4	3	2	1	4	3	2		
Mathematical Relationships	to bu appe	ild under ar as a se	tionships standing eries of skills (1)?	(4) or	Are relationships integrated with other math ideas (4) or are problems focusing on drill only(1)?				Do relationships require a broad use of math (4) or only require the use of skills and procedures (1)?				
	4	3	2	1	4	3	2	1	4	3	2	1	
Missing or weak content from this standard / E 3													

Overall for this Standard: _